Laboratory Notebook, Cat. 30,101

This notebook is by Charles Batchelor and covers the period July-August 1878. It contains notes and acoustic recordings from an investigation of noise on the Metropolitan Elevated Railroad, along with notes and drawings of the aurophone and megaphone. The notebook is similar in style to the thirteen soft-cover tablet notebooks that comprise Unbound Notebook, Vol. 8. The cover is labeled "Laboratory Notes Number 62 T.A. Edison, Menlo Park, N.J." It also contains an inscription, written by Batchelor: "Experiments to determine the cause of the noise on the Metropolitan Elevated Railroad." About 30 pages of this unnumbered book have been used.

LABORATORY NOTES.

Number 62

Experiments to determine the cause of the noise on the Metropolitan Elevated Railroad

T. A. EDISON,

Menlo Park, N. J.

Elevated railway noise July 8th 1878

Chas Batchelor

1 We find that every joint is made directly on the cross tie

2 We find that in riding inside the car there is there is more noise where there are upright side rails to the road and a great number of cross girders: —

3 We find that in most places when the cars go over, the rails sink about ¼ inch showing the rails to be lifted up by heat or otherwise.

4 We find that the lattice girders some of which are weighted in middle act as reeds and continue the vibration for a long time after the train has passed

5 We find that the part between Chambers St and Grand St is wide (very) with heavy spans far apart.

6 We find that the diagonal cross rods vibrate strongly

7 We find that nearly all the rails butt together leaving no room for expansion although that might be with the excessive heat today.

8 We find that trains run slower (a little) do not make as much noise perhaps it would be better to stop and start quicker than run slower

9 We find that most of the noise is due to the hammering on the rail joints by the trucks.

Edison Chas Batchelor 10 hours each

Elevated Railway Noise July 5 1898

10 Car Inspector

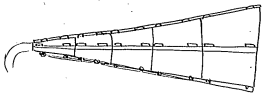
On the track we find that there is a sound produced by trucks on ends of rail
Also sound produced by wheel passing over every tie as it is much more solid on ties than between and the difference makes noise then again can also be noticed a Knock peculiar to the wheel passing over every cross beam these all help to make the roar

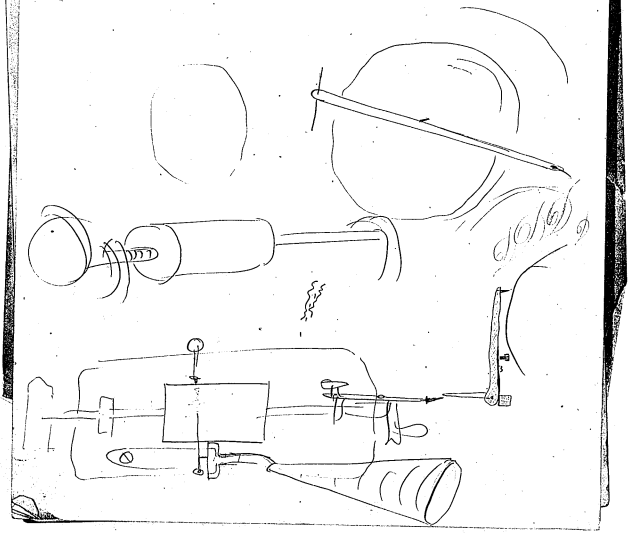
Edison & Batchelor # 10 hours each

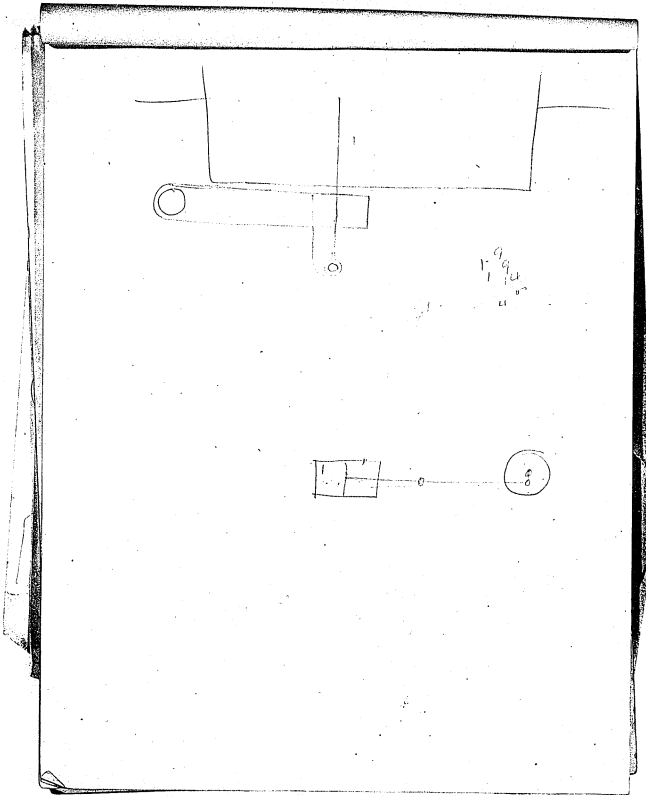
Megaphone

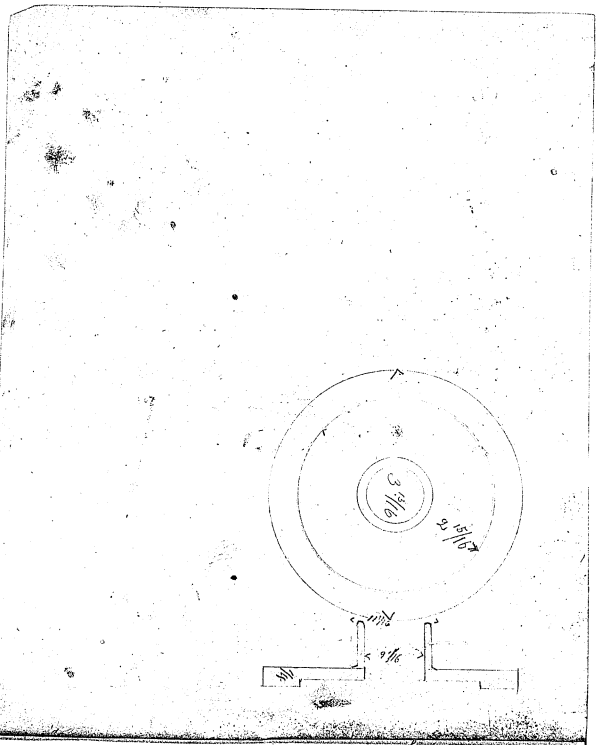
July 6th 1878

Chas Barker









Thomatotograph for
experiments on Elevated R. R.

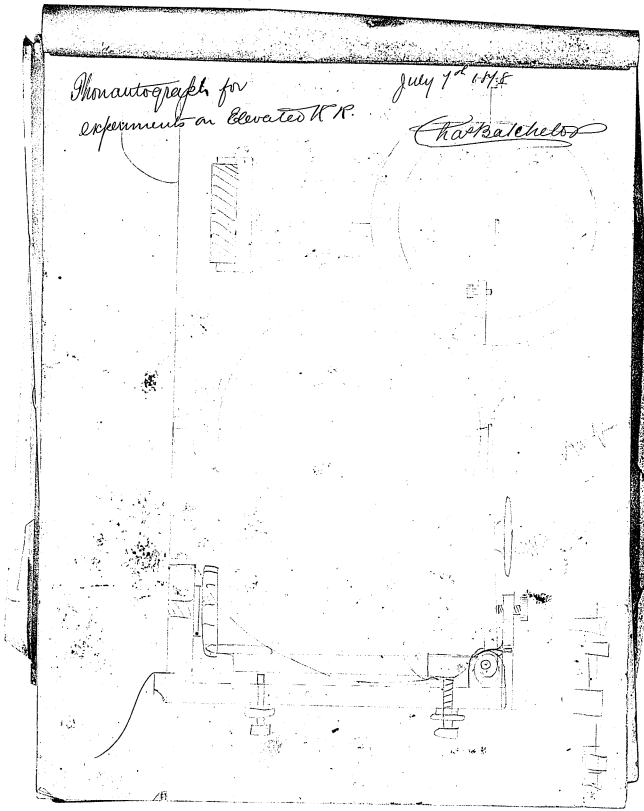
July 1st 1884

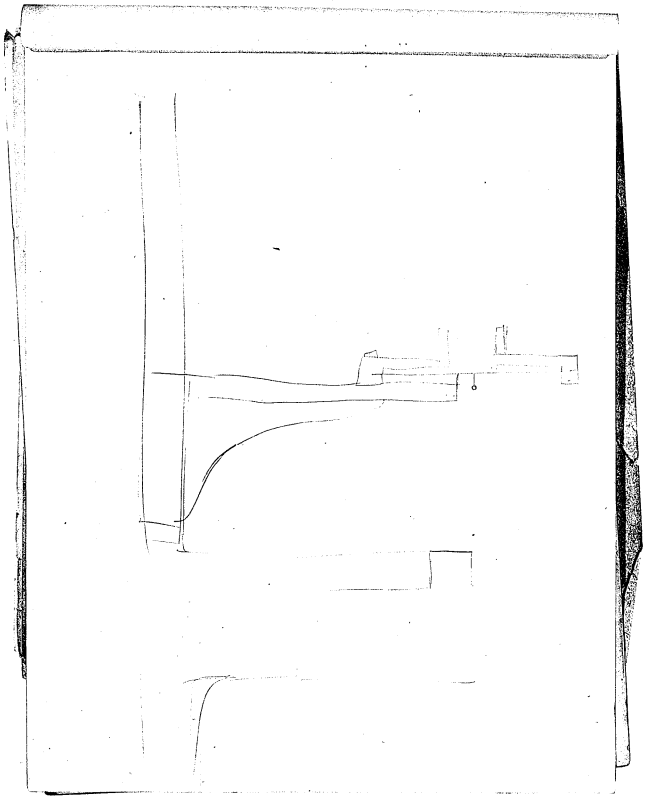
Chas Batchelor

Monauto-graph for experiments on Elevated R.R.

July 1st 1874

Chas Batchelor

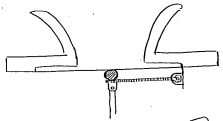


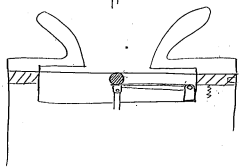


Aerophone

July 4 1878

Phonautograph

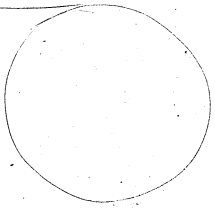


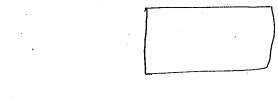


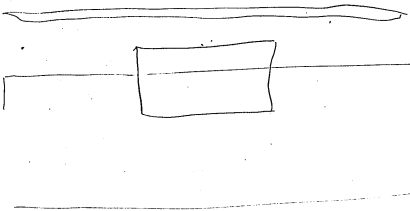
Knees put a small lever on centres in this fastened to the rod by pin and shellaced to diaphragm with a piece of solid rubber between You will have to put a ring of metal between the mouthpiece and the body of casting in order to raise diaphragm high enough

You will have to make the lever pretty light

Can be put together as [illegible]

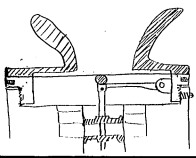




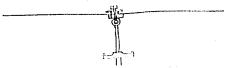


Aerophone

July 7 1878

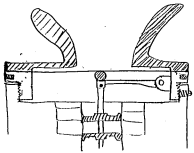


Chronotachometer

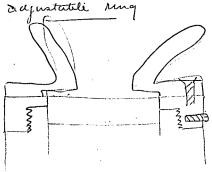


Clear Phone

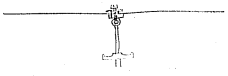
July 7 1878



Adjustable Ring

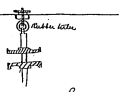


Chappe detector

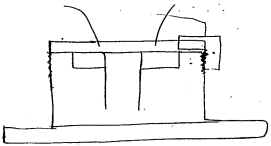


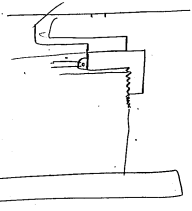
Diaphragm

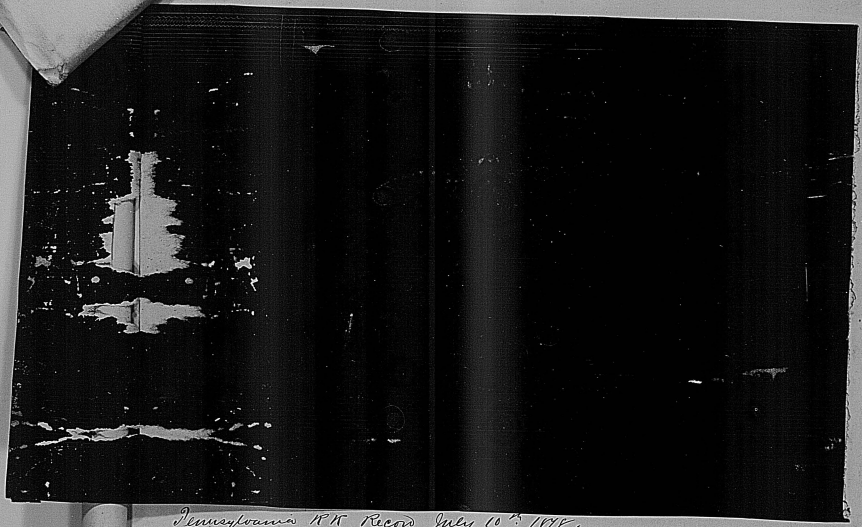
Rubber tube



adjustment on diaphragm

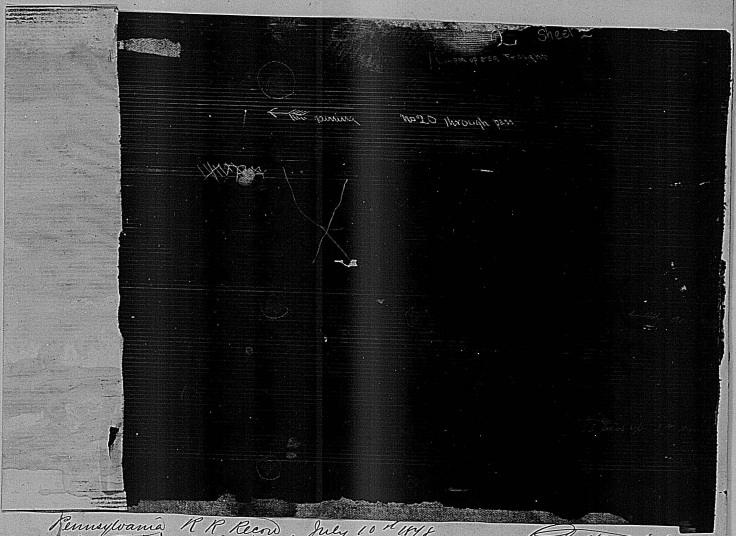




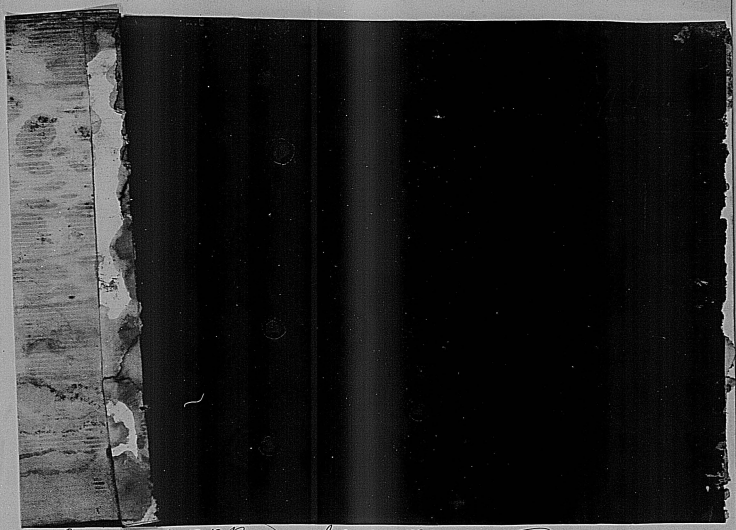


Pennsylvania R.R. Record July 10th 1948.

Chas Batchelor



Pennsylvania R R Record
A Seal must be attached to each July 10th 1941



Pennsylvania RR Record July 11, 1975 Robt Satchfield

Metropolitan Elevated R.R. Aug 14th 1895

Chas Batchelor

1 In taking records from window on 6 Ave I notice that the noise from a car that had curtains round the wheels and also one that a wooden box round the wheels was less than any other train but very little.

2 I notice that there is a roar caused by the wheels resounding in the hollow bottom of the car. the car has a hollow box about 4 or 5 inches deep and when the train is stopping and starting it is plainly heard to resound to the noise of the wheels over the sleepers and ends of rails. when at full speed this seems to be a fine roar.

3 In taking record I notice on the train that if I am in the end of train I get a very poor record whereas if I am near Engine I get very prominent waves therefore I think there is a great deal of noise due to the engine itself

4 Noticed also from window on 6 Ave that when Engine above passed made a great deal of noise although it

gave poor record owing to it going so slow

5 Tapping for exhaust is very difficult and when the ram gets too great a speed we stop and take again when it slows down a little.

6 On Aug 19th in tapping for cross girders we had the machine out on end platform and at 9th very poor record although machine was sensitive I think it was due to being so far away from Engine.

7 Between Bleecker & Grand coming down is exceedingly Aug 20 1892 steep and they run very fast there sometimes.